STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) TEMPLATE E-35

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Land Development Engineering
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SWQMP OUTLINE

[The following outline describes what is expected in the SWQMP. Do not include the following outline as a part of the SWQMP.]

Section	Content Description
Title Page	
Table of Contents	
Certification Page	This template contains suggested content for a certification page. This may be replaced by jurisdiction specific certification page
Project Vicinity Map	Placeholder for applicant to insert a vicinity map, required for all projects
City Storm Water Standards Questionnaire Form E-34	i.e., is this project a development project subject to storm water requirements? which requirements apply?
Site Information Checklist	Base information about the project site that usually remains the same even as structural BMP designs evolve. 3B is not the place to put BMP information – BMP information goes in Forms 4, 5 and 6, and Attachments.
City Standard Project Requirement Checklist Form E-36	Project applicant must acknowledge/answer each required source control BMP. Project applicant must acknowledge/answer each required site design BMP
Summary of PDP Structural BMPs	Project applicant to identify each structural BMP to be implemented, identify party responsible for certification following construction, future owner, and party responsible for on-going maintenance into perpetuity. BMP design information will be included in Attachments 1 and 2.
Attachment 1: Backup for PDP Pollutant Control BMPs	There are several required elements in this backup for pollutant control. The Attachment cover page lists the required elements as a checklist for what the applicant should include in the Attachment.
Attachment 1a: DMA Exhibit	A checklist of the minimum elements of the DMA Exhibit is provided at the back of the attachment 1 cover sheet.
Attachment 1b: Tabular Summary of DMAs and Design Capture Volume Calculations	
Attachment 1c: Harvest and Use Feasibility Screening	Worksheet (Form K-7 in Appendix K) to be included unless the project will implement harvest and use for all DMAs.
Attachment 1d: Infiltration Feasibility Analysis	Project applicant to insert infiltration feasibility analysis in accordance with BMP Design Manual Appendix D.
Attachment 1e: Pollutant Control BMP Design Worksheets/Calculations	Project applicant to insert all applicable pollutant control BMP sizing calculations including sizing worksheets, hand calculations, custom spreadsheets created by the applicant, etc.
Attachment 1f: Trash Capture BMP Requirements	Project applicant to insert sizing calculations and list of trash capture BMPs in accordance with BMP Design Manual Appendix J for drainage areas that are only subject to trash capture requirements and not subject to pollutant control requirements.

Attachment 2: Backup for PDP Hydromodification Control Measures	There are several required elements in this backup. The Attachment cover page lists the required elements as a checklist for what the applicant should include in the Attachment.
Attachment 2a: Hydromodification Management Exhibit	A checklist of the minimum elements of the Hydromodification Management Exhibit is provided.
Attachment 2b: Management of Critical Coarse Sediment Yield Areas	Applicant must include a copy of the WMAA map with the project drainage boundaries shown. Other optional analyses for critical coarse sediment yield areas will also be included here when applicable. The cover page provides check boxes for the applicant to indicate what is included.
Attachment 2c: Geomorphic Assessment of Receiving Channels	Placeholder to include when this applicable.
Attachment 2d: Flow Control Facility Design	Project applicant to insert all applicable hydromodification management BMP sizing calculations.
Attachment 3: Structural BMP Maintenance Thresholds and Actions	Checklists for the contents of this attachment are provided – requirements for this information will vary depending on project status.
Attachment 4: City standard Single Sheet BMP (SSBMP) Exhibit	A checklist of required elements to show on the plans is provided. This is a comprehensive site plan (24” x 36” size) of the project showing the type and locations of Treatment Control, Hydromodification, Site Design, LID and Source Control BMP’s. Use the City’s template SSBMP plan, latest version.

CITY OF CARLSBAD

PRIORITY DEVELOPMENT PROJECT (PDP)
STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)
FOR
[INSERT PROJECT NAME]
[INSERT PROJECT ID (CT/MS/SDP/CDP/PD)]
[INSERT DRAWING No. (DWG ___-__)]
[INSERT GR No. _____]

ENGINEER OF WORK:

[INSERT CIVIL ENGINEER'S NAME AND PE NUMBER HERE, PROVIDE WET SIGNATURE AND STAMP ABOVE LINE]

PREPARED FOR:

[INSERT APPLICANT NAME]
[INSERT ADDRESS]
[INSERT CITY, STATE ZIP CODE]
[INSERT TELEPHONE NUMBER]

PREPARED BY:

[INSERT COMPANY NAME]
[INSERT ADDRESS]
[INSERT CITY, STATE ZIP CODE]
[INSERT TELEPHONE NUMBER]

DATE:
[INSERT MONTH, DAY, YEAR]

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CERTIFICATION PAGE

Project Name: [Insert]
Project ID: [Insert]

I hereby declare that I am the Engineer in Responsible Charge of design of storm water BMPs for this project, and that I have exercised responsible charge over the design of the project as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the requirements of the BMP Design Manual, which is based on the requirements of SDRWQCB Order No. R9-2013-0001 (MS4 Permit) or the current Order.

I have read and understand that the City Engineer has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable source control and site design BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this SWQMP by the City Engineer is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

_____
Engineer of Work's Signature, PE Number & Expiration Date

_____
Print Name

_____
Company

_____
Date

PROJECT VICINITY MAP

[Insert City's Storm Water Standard Questionnaire (Form E-34) here]

SITE INFORMATION CHECKLIST

Project Summary Information	
Project Name	
Project ID	
Project Address	
Assessor's Parcel Number(s) (APN(s))	
Project Watershed (Hydrologic Unit)	Carlsbad 904
Parcel Area	_____ Acres (_____ Square Feet)
Existing Impervious Area (subset of Parcel Area)	_____ Acres (_____ Square Feet)
Area to be disturbed by the project (Project Area)	_____ Acres (_____ Square Feet)
Project Proposed Impervious Area (subset of Project Area)	_____ Acres (_____ Square Feet)
Project Proposed Pervious Area (subset of Project Area)	_____ Acres (_____ Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Description of Existing Site Condition and Drainage Patterns
Current Status of the Site (select all that apply): □ Existing development □ Previously graded but not built out □ Agricultural or other non-impervious use □ Vacant, undeveloped/natural Description / Additional Information:
Existing Land Cover Includes (select all that apply): □ Vegetative Cover □ Non-Vegetated Pervious Areas □ Impervious Areas Description / Additional Information:
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): □ NRCS Type A □ NRCS Type B □ NRCS Type C □ NRCS Type D
Approximate Depth to Groundwater (GW): □ GW Depth < 5 feet □ 5 feet < GW Depth < 10 feet □ 10 feet < GW Depth < 20 feet □ GW Depth > 20 feet
Existing Natural Hydrologic Features (select all that apply): □ Watercourses □ Seeps □ Springs □ Wetlands □ None Description / Additional Information:

Description of Existing Site Topography and Drainage [How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? if so, describe]:

Description of Proposed Site Development and Drainage Patterns
Project Description / Proposed Land Use and/or Activities:
List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):
List/describe proposed pervious features of the project (e.g., landscape areas):
Does the project include grading and changes to site topography? □ Yes □ No Description / Additional Information:
Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)? □ Yes □ No Description / Additional Information:

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

- ☐ On-site storm drain inlets
- ☐ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ☐ Need for future indoor & structural pest control
- ☐ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ☐ Food service
- ☐ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ☐ Fire Sprinkler Test Water
- ☐ Miscellaneous Drain or Wash Water
- ☐ Plazas, sidewalks, and parking lots

Identification of Receiving Water Pollutants of Concern		
Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):		
List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:		
303(d) Impaired Water Body	**Pollutant(s)/Stressor(s)**	**TMDLs**

Identification of Project Site Pollutants			
Identify pollutants anticipated from the project site based on all proposed use(s) of the site (see Table B.6-1 below):			
Pollutant	**Not Applicable to the Project Site**	**Anticipated from the Project Site**	**Also a Receiving Water Pollutant of Concern**
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

TABLE Error! No text of specified style in document.**-1. Anticipated and Potential Pollutants Generated by Land Use Type**

Priority Project Categories	General Pollutant Categories								
	Sediment	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P(1)	P(2)	P	X
Commercial Development >one acre	P(1)	P(1)	X	P(2)	X	P(5)	X	P(3)	P(5)
Heavy Industry	X		X	X	X	X	X		
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	P(1)
Hillside Development >5,000 ft2	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Retail Gasoline Outlets			X	X	X	X	X		
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(5)	X	X	P(1)

X = anticipated

P = potential

(1) A potential pollutant if landscaping exists onsite.

(2) A potential pollutant if the project includes uncovered parking areas.

(3) A potential pollutant if land use involves food or animal waste products.

(4) Including petroleum hydrocarbons.

(5) Including solvents.

Trash Capture BMP Requirements

The project must meet the following Trash Capture BMP Requirements (see Section 4.4 of the BMP Design Manual): 1) The trash capture BMP is sized for a one-year, one-hour storm event or equivalent storm drain system, and 2) the trash capture BMP captures trash equal or greater to 5mm.

Description / Discussion of Trash Capture BMPs:

Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)?

- ☐ Yes, hydromodification management flow control structural BMPs required.
- ☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- ☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- ☐ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*
***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

- ☐ Yes
- ☐ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Appendix H of the manual been performed?

- ☐ H.6.1 Site-Specific GLU Analysis
- ☐ H.7 Downstream Systems Sensitivity to Coarse Sediment
- ☐ H.7.3 Coarse Sediment Source Area Verification
- ☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

- ☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.
- ☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.
- ☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Flow Control for Post-Project Runoff* *This Section only required if hydromodification management requirements apply
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.
Has a geomorphic assessment been performed for the receiving channel(s)? □ No, the low flow threshold is 0.1Q2 (default low flow threshold) □ Yes, the result is the low flow threshold is 0.1Q2 □ Yes, the result is the low flow threshold is 0.3Q2 □ Yes, the result is the low flow threshold is 0.5Q2 If a geomorphic assessment has been performed, provide title, date, and preparer: Discussion / Additional Information: (optional)

Other Site Requirements and Constraints
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or City codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.
Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous sections as needed.

[Insert City's Standard Project Requirement Checklist Form E-36 (here)]

SUMMARY OF PDP STRUCTURAL BMPS

PDP Structural BMPs
All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s). PDP structural BMPs must be verified by the City at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the City must confirm the maintenance (see Section 7 of the BMP Design Manual). Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).
Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated together or separate. [Continue on next page as necessary.]

[Continued from previous page – This page is reserved for continuation of description of general strategy for structural BMP implementation at the site.]

Structural BMP Summary Information
[Copy this page as needed to provide information for each individual proposed structural BMP]

Structural BMP ID No.

DWG _____ Sheet No. _____

Type of structural BMP:

- □ Retention by harvest and use (HU-1)
- □ Retention by infiltration basin (INF-1)
- □ Retention by bioretention (INF-2)
- □ Retention by permeable pavement (INF-3)
- □ Dry Wells (INF-4)
- □ Partial retention by biofiltration with partial retention (PR-1)
- □ Biofiltration (BF-1)
- □ Proprietary Biofiltration (BF-3)
- □ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- □ Detention pond or vault for hydromodification management
- □ Other (describe in discussion section below)

Purpose:

- □ Pollutant control only
- □ Hydromodification control only
- □ Combined pollutant control and hydromodification control
- □ Pre-treatment/forebay for another structural BMP
- □ Other (describe in discussion section below)

Discussion (as needed):

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Check which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet. (24"x36" Exhibit typically required)	□ Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	□ Included on DMA Exhibit in Attachment 1a □ Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form K-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B of the BMP Design Manual to complete Form K-7.	□ Included □ Not included because the entire project will use infiltration BMPs
Attachment 1d	Infiltration Feasibility Analysis (Required unless the project will use harvest and use BMPs) Refer to Appendix D of the BMP Design Manual.	□ Included □ Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B, E, and I of the BMP Design Manual for structural pollutant control and significant site design BMP design guidelines	□ Included
Attachment 1f	Trash Capture BMP Design Calculations (Required unless the entire project will use permanent storm water quality basins) Refer to Appendices J of the BMP Design Manual for Trash capture BMP design guidelines	□ Included □ Not included because the entire project will use permanent storm water quality basins (i.e. infiltration, biofiltration BMPs)

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- ☐ Underlying hydrologic soil group
- ☐ Approximate depth to groundwater
- ☐ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ☐ Critical coarse sediment yield areas to be protected (if present)
- ☐ Existing topography and impervious areas
- ☐ Existing and proposed site drainage network and connections to drainage offsite
- ☐ Proposed grading
- ☐ Proposed impervious features
- ☐ Proposed design features and surface treatments used to minimize imperviousness
- ☐ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ☐ Structural BMPs (identify location and type of BMP)
- ☐ Tabular DMA Summary

Use the following table for Tabular DMA Summary

Worksheet B-1: Tabular Summary of DMAs

Tabular Summary of DMAs							Worksheet B-1		
DMA Unique Identifier	Area (acres)	Impervious Area (acres)	% Imp	HSG	Area Weighted Runoff Coefficient	DCV (cubic feet)	Treated By (BMP ID)	Pollutant Control Type	Drains to (POC ID)
Summary of DMA Information (Must match project description and SWQMP Narrative)									
No. of DMAs	Total DMA Area (acres)	Total Impervious Area (acres)	% Imp		Area Weighted Runoff Coefficient	Total DCV (cubic feet)	Total Area Treated (acres)		No. of POCs

Where: DMA = Drainage Management Area; Imp = Imperviousness; HSG = Hydrologic Soil Group; DCV= Design Capture Volume; BMP = Best Management Practice; POC = Point of Compliance; ID = identifier; No. = Number

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

[This is the cover sheet for Attachment 2.]

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 2a	Hydromodification Management Exhibit (Required)	□ Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	□ Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination □ Appendix H.6.1 Verification of Geomorphic Landscape Units Onsite □ Appendix H.7 Downstream Systems Sensitivity to Coarse Sediment
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	□ Not performed □ Included
Attachment 2d	Flow Control Facility Design and Structural BMP Drawdown Calculations (Required) See Chapter 6 and Appendix G of the BMP Design Manual	□ Included

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

- ☐ Underlying hydrologic soil group
- ☐ Approximate depth to groundwater
- ☐ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ☐ Critical coarse sediment yield areas to be protected (if present)
- ☐ Existing topography
- ☐ Existing and proposed site drainage network and connections to drainage offsite
- ☐ Proposed grading
- ☐ Proposed impervious features
- ☐ Proposed design features and surface treatments used to minimize imperviousness
- ☐ Point(s) of Compliance (POC) for Hydromodification Management
- ☐ Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
- ☐ Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

ATTACHMENT 3
Structural BMP Maintenance Information

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Preliminary Design/Planning/CEQA level submittal:

Attachment 3 must identify:

- ☐ Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual

Final Design level submittal:

Attachment 3 must identify:

- ☐ Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds for BMPs subject to siltation or heavy trash(e.g., silt level posts or other markings shall be included in all BMP components that will trap and store sediment, trash, and/or debris, so that the inspector may determine how full the BMP is, and the maintenance personnel may determine where the bottom of the BMP is . If required, posts or other markings shall be indicated and described on structural BMP plans.)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

ATTACHMENT 4
City standard Single Sheet BMP (SSBMP) Exhibit

[Use the City's standard Single Sheet BMP Plan.]